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(58) Field of search

E1D

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(54) A tent with inflatable frame

(57) A tent 2 having an inflatable frame 4, the inflatable frame 4 having valve means 46,50 which enables the frame (4) to be inflated for use of the tent 2 and to be deflated for storage of the tent 2, and the valve means 46,50 being such as to enable the inflation of the frame 4 by compressed air from compressed air inflator means 24.

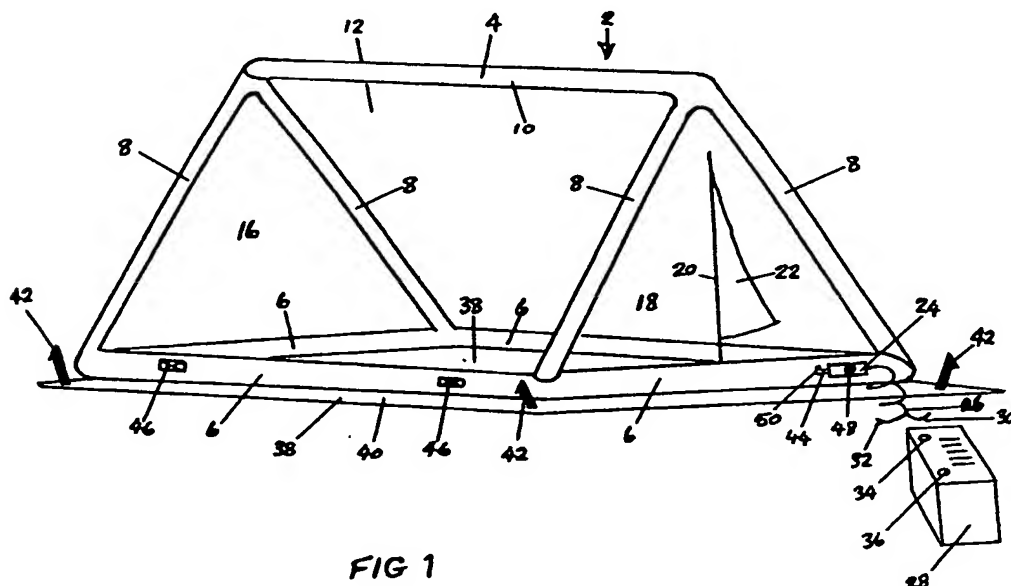
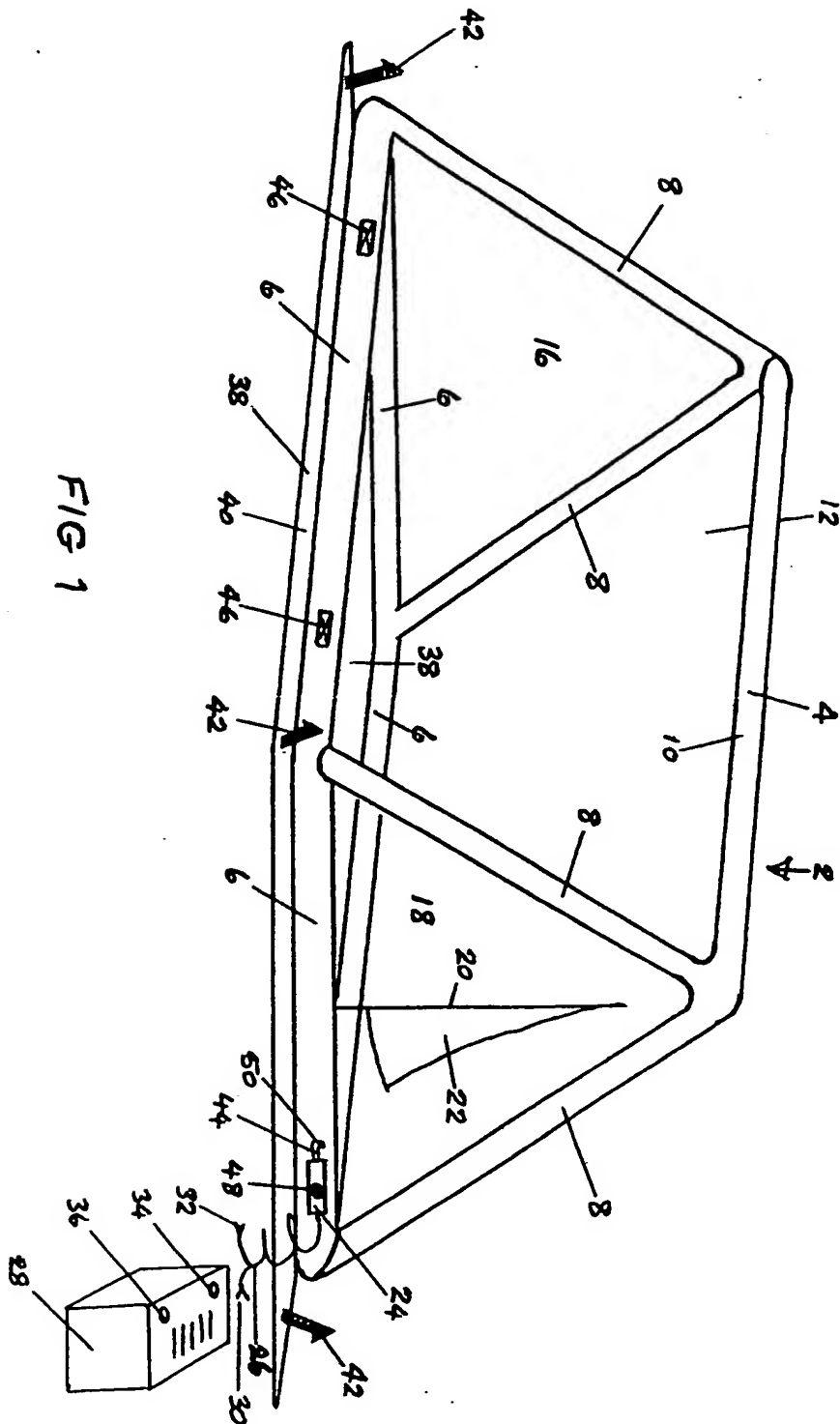


FIG 1

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SPECIFICATION

A tent

5 This invention relates to a tent and it relates more especially to a tent having an inflatable frame.

A tent having an inflatable frame which when inflated causes the tent to have a shape of an igloo is known. This known tent was manually inflated by a pump and this was neither convenient or speedy. The known tent is no longer manufactured and one of the reasons for this is believed to be the time and inconvenience required to inflate the inflatable frame. Thus, whilst the known inflatable tent was an attempt to provide an alternative to the more usually employed tent having rigid pole frames, the known tent with the inflatable frame was not successful and the idea has been discarded for many years.

It is an aim of the present invention to provide a tent having an inflatable frame, which tent does not suffer from the above mentioned disadvantages of the known tent with the inflatable frame.

Accordingly, this invention provides a tent having an inflatable frame, the inflatable frame having valve means which is for enabling the frame to be inflated for use of the tent and to be deflated for storage of the tent, and the valve means being such as to enable the inflation of the frame by compressed air from compressed air inflater means.

By using compressed air from compressed air inflater means, the inflatable frame can easily, conveniently and speedily be inflated. The compressed air enables relatively high pressures easily to be achieved within the inflated frame so that various types of frame construction can be employed and there is no constraint into employing an igloo type frame. This means that the inflatable frame can be provided with a roof member so that the tent can be formed with front, rear and side walls. Such a construction is preferred by many campers.

Preferably, the compressed air inflater means is a compressor.

The use of a compressor is especially convenient because it can be operated from a vehicle battery. For example, a family going on a camping holiday need only take the packed tent from the boot of a car, drop it on the ground, and connect the compressor to the car battery, for example via a cigarette lighter socket. The compressor will then automatically inflate the frame of the tent in a speedy manner which does not require any manual work by the family wishing to use the tent. Because rigid poles are not employed in the frame, the tent can pack down into a small package which is convenient for storage and is economical of used storage space.

The compressor may be releasably secured

to the tent. In this case the compressor may have a lead terminating in valve connector means for connecting to the valve means on the frame.

Alternatively, the compressor may be permanently secured to the tent. In this case, the connection between the compressor and the frame will usually be a permanent connection so that valve connector means will not usually be required.

As an alternative to employing a compressor, the compressed air inflater means may be a compressed air container.

With a compressed air container, the container could be arranged to have sufficient air to inflate the frame. A separate container could be employed each time the frame was required to be inflated. Alternatively, a larger container could be employed having sufficient compressed air to inflate the frame several times. Usually the compressed air container will have appropriate limit valve means for stopping the supply of gas to the frame when the frame has been inflated to the required pressure. The limit valve means can be pre-set to cut-out at a pre-set pressure. The limit valve means may be arranged automatically to cut power to the compressor at the pre-set pressure, or to stop the air supply from the compressed air container.

If desired, the tent could include a pressure gauge for showing the air pressure within the frame.

Advantageously, the tent is such that it includes an integral ground sheet which is permanently connected to sides of the tent.

The integral ground sheet can be glued in position. The use of an integral ground sheet is convenient since it avoids having to spread out a separate ground sheet. A separate ground sheet can however be used if desired. Another advantage however of employing an integral ground sheet is that the assembled tent then forms a single weather-proof structure and persons camping in the tent do not have to worry about water getting into the tent via incorrectly positioned loose ground sheets.

The tent will usually include ground fixing means. The ground fixing means may include permanent loops. The permanent loops may be in the form of metal ringed holes which receive pegs which are hammered into the ground.

The tent may be such that it has sides which are provided with windows. The windows may be provided with closure flaps.

The tent will usually only have one entrance/exit but it may have more than one entrance/exit if desired. Similarly, the tent may be formed to have one or more rooms as may also be desired.

Embodiments of the invention will now be described solely by way of example and with reference to the accompanying drawings in

which:

Figure 1 is a perspective view of a first tent; and

Figure 2 is a perspective view of a second tent.

Referring to Figure 1, there is shown a tent 2 having an inflatable frame 4. The inflatable frame 4 has a base part formed of four base members 6, two end parts formed of inclined members 8 and a ridge part formed of a ridge member 10. For ease of illustration, the canvass or other material of the tent 2 has been shown as being transparent but, in use, this would obviously not be the case. The tent 2 thus has two side walls 12, 14, a rear wall 16 and a front wall 18. The front wall 18 has a vertical slit 20 forming a door flap 22. In addition to canvass, the various walls can be made of a plastics material since this may be easy to secure to the inflatable frame 4 for example by vulcanising or various plastics adhesives.

The inflatable frame 4 is very easily and conveniently inflated by compressed air inflater means in the form of a compressor 24. The compressor 24 is connected by a lead 26 to a battery 28 of a vehicle (not shown). The lead 26 can terminate in a pair of clips 30, 32 for fitting to terminals 34, 36 of the battery 28. The compressor 24 can be arranged to be such that it can be driven from a twelve or six volt battery 28.

The tent 2 includes an integral ground sheet 38. This ensures that water cannot seep into the tent via an incorrectly positioned ground sheet as might be the case if the ground sheet were not integrally formed with the tent 2. The ground sheet 38 is secured to the underneath surface of the base members 6 as shown.

The ground sheet 38 advantageously projects as shown beyond the base members 6 to form a skirt 40 around the edge of the tent 2. This skirt 40 can advantageously be provided with metal ringed holes for receiving pegs 42 as shown. The ground sheet 38 and also the material employed for the various walls of the tent 2 can be made to liferaft standards so that it is able to withstand continual and robust use.

The compressor 24 is provided with a connector pipe 44 for connecting the outlet side of the compressor 24 to one of the base members 6 of the inflatable frame 4 as shown. The compressor 24 is permanently secured to the inflatable frame 4, for example by straps (not shown).

It will be appreciated that the tent 2 can be very easily and speedily erected with the absolute minimum of trouble.

Referring now to Figure 2, similar parts as in Figure 1 have been given the same reference numerals and their precise construction and operation will not again be given. It will be seen from Figure 2 that the side walls

12, 14 are more vertical so that more space is afforded within the tent 2.

In both of the tents 2 shown in Figures 1 and 2, the two longest base members 6 are each provided with two pressure release valves 46 for speedily releasing pressure from within the tents 2 when deflation of the tents 2 is required. The pressure release valves 46 thus form outlet valve means. The pressure release valves 46 may be of the type that have a cap that pulls out for pressure release.

Also, in both of the tents 2 shown in Figures 1 and 2, the electrically driven compressor 24 is provided with a pressure limit valve 48. The pressure limit valve 48 will be set at a predetermined pressure and it will operate when the inflatable frame 4 has been inflated to this predetermined pressure to prevent the compressor 24 from inflating the frame 4 any further.

Where the compressor 24 is permanently connected to the frame 4, the connector pipe 44 will have inlet valve means 50 to stop the loss of air pressure from within the frame 4 once the predetermined air pressure has been reached. Alternatively, the inlet valve means 50 can be provided in the compressor 24 or in the frame 4. Where the compressor 24 is releasably connected to the frame 4, the inlet valve means 50 will usually be in the connector pipe 44 to stop the loss of air pressure from within the frame 4 when the required air pressure has been reached and the compressor 24 is disconnected.

It is to be appreciated that the embodiments of the invention described above with reference to the accompanying drawings have been given by way of example only and that modifications may be effected. Thus, for example, the inflatable frame 4 may have a different shape to that shown so that, for example, the tent 2 could be in the shape of an igloo. The tent 2 may also have more than one room if desired. Further, when the compressor 24 is arranged to be a detachable compressor, the connector pipe 44 will usually be connected to the illustrated base member 6 by some form of quick release valve means employing for example, an overcentre lever arrangement of the type that is currently employed on foot pumps for inflating vehicle tyres. With a permanently connected compressor 24 as shown in the drawings, the connector pipe 44 may also be provided with one or more pressure release valves for releasing pressure from the inflatable frame 4 when deflation of the tent 2 is required. The connector pipe 44, the inflatable frame 4 or the compressor 24 may be provided with a pressure gauge for enabling the pressure within the inflatable frame 4 easily to be seen.

CLAIMS

1. A tent having an inflatable frame, the inflatable frame having valve means which is

- for enabling the frame to be inflated for use of the tent and to be deflated for storage of the tent, and the valve means being such as to enable the inflation of the frame by compressed air from compressed air inflater means.
2. A tent according to claim 1 and including a pressure release valve for releasing pressure from the frame in the event of over-inflation.
- 10 3. A tent according to claim 1 or claim 2 in which the frame is such that when it is inflated it enables the tent to have front, rear and side walls.
4. A tent according to any one of the preceding claims in which the compressed air inflater means is a compressor.
- 15 5. A tent according to claim 4 in which the compressor is releasably secured to the tent.
6. A tent according to claim 5 in which the compressor has a lead terminating in valve connector means for connecting to the valve means on the frame.
- 20 7. A tent according to claim 6 in which the valve connector means has a lever which operates to secure and release the valve connector means on the valve means on the frame.
- 25 8. A tent according to claim 4 in which the compressor is permanently secured to the tent.
- 30 9. A tent according to any one of claims 1 to 3 in which the compressed air inflater means is a compressed air container.
10. A tent according to any one of the preceding claims and including a pressure gauge for showing the air pressure within the frame.
- 35 11. A tent according to any one of the preceding claims and including an integral ground sheet which is permanently connected to a base part of the frame.
- 40 12. A tent according to any one of the preceding claims and including ground fixing means.
13. A tent according to claim 11 and 12 or to claim 11 and 13 in which the ground fixing means is formed in a skirt portion of the integral ground sheet, which skirt portion of the integral ground sheet extends beyond the base part of the frame.
- 45 14. A tent substantially as herein described with reference to Figure 1 or Figure 2 of the accompanying drawings.
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